

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

- 1 ~~sub~~ 1. (Currently amended) A method for providing concurrency control for a
2 policy-based management system that controls resources in a distributed
3 computing system, the method comprising:
4 receiving a request to perform an operation on a lockable resource from a
5 controller in the distributed computing system, wherein the lockable resource
6 includes one of a device, an appliance, a system, and an application, wherein the
7 ~~lockable resource presents one or more independent locks providing access to~~
8 ~~independent sub-units of the resource and wherein the one or more independent~~
9 ~~locks allow multiple controllers to lock independent sub-units of the lockable~~
10 ~~resource independently;~~
11 ~~wherein the controller and a policy governing the controller comprise a~~
12 ~~lockable resource, whereby a policy may control a lock on a second policy and the~~
13 ~~second policy may control a lock on a lockable resource;~~
14 wherein the controller sends the request in order to enforce a first policy
15 for controlling resources in the distributed computing system;
16 determining whether the controller holds a lock on the lockable resource;
17 allowing the controller to execute the operation on the lockable resource if
18 the controller holds the lock on the lockable resource;
19 allowing the controller to acquire the lock if the controller does not hold
20 the lock on the lockable resource; and

21 allowing the controller to execute the operation on the lockable resource if
22 the controller acquires the lock.

1 2. (Original) The method of claim 1, wherein the first policy is configured
2 to command resources in the distributed computing system to perform actions so
3 that the distributed computing system operates in accordance with a rule that is
4 enforced by the first policy, wherein the rule governs behavior of resources within
5 the distributed computing system.

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2 3. (Original) The method of claim 1, further comprising throwing an
3 exception if the controller does not hold the lock on the lockable resource and if
the controller does not acquire the lock.

2 4. (Original) The method of claim 1, wherein the lock held on the lockable
3 resource expires after a pre-specified lease period, unless the lease is renewed
within the pre-specified lease period.

1 5. (Original) The method of claim 1, wherein the lockable resource
2 includes a resource within the distributed computing system.

1 6. (Original) The method of claim 1, wherein the lockable resource
2 includes a second policy for controlling resources in the distributed computing
3 system.

1 7. (Original) The method of claim 1, wherein the controller includes a
2 client in the distributed computing system.

1 8. (Original) The method of claim 1, wherein the controller includes the
2 first policy for controlling resources in the distributed computing system.

1 9. (Original) The method of claim 1, wherein the controller includes a
2 higher-level policy for controlling resources in the distributed computing system,
3 and wherein the lockable resource includes a lower-level policy for controlling
4 resources in the distributed computing system.

1 10. (Original) The method of claim 1, wherein allowing the controller to
2 acquire the lock includes allowing the controller to acquire the lock from a
3 resource that allocates locks to controllers.

1 11. (Canceled)

1 12. (Currently amended) A computer-readable storage medium storing
2 instructions that when executed by a computer cause the computer to perform a
3 method for providing concurrency control for a policy-based management system
4 that controls resources in a distributed computing system, the method comprising:
5 receiving a request to perform an operation on a lockable resource from a
6 controller in the distributed computing system, wherein the lockable resource
7 includes one of a device, an appliance, a system, and an application, wherein the
8 lockable resource presents one or more independent locks providing access to
9 independent sub-units of the resource and wherein the one or more independent
10 locks allow multiple controllers to lock independent sub-units of the lockable
11 resource independently;
12 wherein the controller sends the request in order to enforce a first policy
13 for controlling resources in the distributed computing system;
14 determining whether the controller holds a lock on the lockable resource;

15 allowing the controller to execute the operation on the lockable resource if
16 the controller holds the lock on the lockable resource;
17 allowing the controller to acquire the lock if the controller does not hold
18 the lock on the lockable resource; and
19 allowing the controller to execute the operation on the lockable resource if
20 the controller acquires the lock.

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1 13. (Original) The computer-readable storage medium of claim 12,
2 wherein the first policy is configured to command resources in the distributed
3 computing system to perform actions so that the distributed computing system
4 operates in accordance with a rule that is enforced by the first policy, wherein the
5 rule governs behavior of resources within the distributed computing system.

1 14. (Original) The computer-readable storage medium of claim 12,
2 wherein the method further comprises throwing an exception if the controller does
3 not hold the lock on the lockable resource and if the controller does not acquire
4 the lock.

1 15. (Original) The computer-readable storage medium of claim 12,
2 wherein locks held by the controller expire after a pre-specified lease period,
3 unless the lease is renewed within the pre-specified lease period.

1 16. (Currently amended) An apparatus that provides concurrency control
2 within a policy-based management system that controls resources in a distributed
3 computing system, the apparatus comprising:
4 a receiving mechanism that receives a request to perform an operation on a
5 lockable resource from a controller in the distributed computing system, wherein
6 the lockable resource includes one of a device, an appliance, a system, and an

7 ~~application, wherein the lockable resource presents one or more independent locks~~
8 ~~providing access to independent sub-units of the resource and wherein the one or~~
9 ~~more independent locks allow multiple controllers to lock independent sub-units~~
10 ~~of the lockable resource independently;~~

11 ~~wherein the controller and a policy governing the controller comprise a~~
12 ~~lockable resource, whereby a policy may control a lock on a second policy and the~~
13 ~~second policy may control a lock on a lockable resource;~~

14 ~~wherein the controller sends the request in order to enforce a first policy~~
15 ~~for controlling resources in the distributed computing system;~~

16 ~~a determining mechanism that determines whether the controller holds a~~
17 ~~lock on the lockable resource;~~

18 ~~an execution mechanism that is configured to,~~

19 ~~allow the controller to acquire the lock if the controller~~
20 ~~does not hold the lock on the lockable resource, and to~~

21 ~~allow the controller to execute the operation on the lockable~~
22 ~~resource if the controller holds the lock on the lockable resource.~~

1 17. (Original) The apparatus of claim 16, wherein the first policy is
2 configured to command resources in the distributed computing system to perform
3 actions so that the distributed computing system operates in accordance with a
4 rule that is enforced by the first policy, wherein the rule governs behavior of
5 resources within the distributed computing system.

1 18. (Original) The apparatus of claim 16, wherein the execution
2 mechanism is configured to throw an exception if the controller does not hold the
3 lock on the lockable resource and if the controller does not acquire the lock.

1 19. (Original) The apparatus of claim 16, wherein the lock on the lockable
2 resource expires after a pre-specified lease period, unless the lease is renewed
3 within the pre-specified lease period.

1 20. (Original) The apparatus of claim 16, wherein the lockable resource
2 includes a resource within the distributed computing system.

1 21. (Original) The apparatus of claim 16, wherein the lockable resource
2 includes a second policy for controlling resources in the distributed computing
3 system.

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1 22. (Original) The apparatus of claim 16, wherein the controller includes a
2 client in the distributed computing system.

1 23. (Original) The apparatus of claim 16, wherein the controller includes
2 the first policy for controlling resources in the distributed computing system.

1 24. (Original) The apparatus of claim 16, wherein the controller includes a
2 higher-level policy for controlling resources in the distributed computing system,
3 and wherein the lockable resource includes a lower-level policy for controlling
4 resources in the distributed computing system.

1 25. (Original) The apparatus of claim 16, wherein the execution
2 mechanism is configured to allow the controller to acquire the lock from a
3 resource that allocates locks to controllers.

1 (26. (Canceled).)

1 27. (New) The method of claim 1, wherein the lockable resource presents
2 one or more independent locks providing access to independent sub-units of the
3 resource.,

1 28. (New) The apparatus of claim 16, wherein the lockable resource
2 presents one or more independent locks providing access to independent sub-units
3 of the resource.